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CERCLA SITE TEAM EVALUATION PRIORITIZATION (ESI)

for:

CELOTEX CORPORATION DUMP SITE
WILMINGTON, ILLINOIS

PREPARED BY:
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
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**SITE TEAM EVALUATION PRIORITIZATION
CELOTEX CORPORATION DUMP SITE**

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1. SITE BACKGROUND

1.1 INTRODUCTION

On September 30, 1994 the Illinois Environmental Protection Agency's CERCLA Site Assessment Program was tasked by the U.S. Environmental Protection Agency (USEPA) to conduct a Site Team Evaluation Prioritization (STEP) of the Celotex Corporate Dump Site.

This investigation was undertaken by the authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 40 CFR, 1980 as amended by the Superfund Amendments and Reauthorization Act (SARA) of 1986.

The Celotex Dump Site located in Wilmington, Illinois was initially placed on the Comprehensive Environmental Response Compensation and Liability Inventory System (CERCLIS) in response to the State of Illinois concerns that past site activities may have caused soil and sediment contamination of the surrounding community, on-site wetlands and the Kankakee River. In July of 1996 the Illinois EPA's CERCLA Site Assessment Unit prepared a Site Team Evaluation Prioritization Work Plan for Celotex which was submitted to the Region 5 Offices of USEPA for review. A site safety plan was also prepared at this time and after being reviewed by the Illinois EPA's Office of Chemical Safety, the field activity portion of the inspection occurred on August 21 and 22, 1996. The CERCLA Inspection included the collection of seven soil samples and one groundwater sample.

1.2 SITE DESCRIPTION

The site is located just east of the Kankakee River on Kankakee Street in Wilmington, Illinois. Celotex operated a solid waste disposal site on a forty-acre parcel of land located at the NW 1/4 of the NW 1/4 of Section 25, Township 33 North, Range 2 East in Will County. This disposal area consists of two landfills, two surface depressions, and several unlined disposal lagoons. The landfills appear to be inactive, covered and vegetated. The lagoons contain three to four feet of clear water and lack emergent and surficial animal and plant life. This entire area is prone to flooding from the Kankakee River on the west and from the Forked Creek on the South. The site is bordered on the northwest and east by residential areas. These residential areas provide several points of access to the site. Paths are easily found throughout this area showing some possible recreational use of the site.

1.3 SITE HISTORY

According to Illinois Environmental Protection Agency files Celotex operated a manufacturing facility on the southern side of the Forked Creek from 1955 till the mid- 1980's. The primary products from this operation were roofing shingles and felt paper. Wastes generated from this plant were then disposed of on the above mentioned property and included: off-specification roofing shingles, felt paper, wooden pallets and liquid sludge from a recycling mill. This liquid sludge is a by-product from the recycling of rags, magazines, wood pulp, and paper.

source of PCBs

In 1979 a site visit by Illinois EPA personnel revealed a load of waste oil staged next to a surface depression and an oil stained area that possibly had wastes deposited there before. In this same year a 30,000 gallon spill of asphalt material at the plant was cleaned up and disposed of at this

dump site.

An enforcement case was started in 1978 against Celotex based on a history of compliance violations. This complaint alleged that the waste disposal site used by Celotex (the corporate dump site) was not operated within the current regulations applicable to it. These charges were later dismissed because the Attorney General failed to comply with discovery orders and due to inadequate documentation.

1.4 REGULATORY STATUS

Regulatory involvement at this site is limited to the above mentioned activities by the Illinois EPA and the Attorney General's Office. The Celotex Corporation Dump Site was never regulated under the Resource Conservation Recovery Act (RCRA), and given the nature of the operation, the years it produced roofing materials, and the federal and state environmental regulations which existed during this time, the site in all likelihood would not fall under the jurisdiction of the Atomic Energy Act (AEA), Toxic Substances Control Act (TSCA), Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), or the Uranium Mill Tailings Radiation Control Act (UMTRCA).

2 STEP ACTIVITIES

This section contains information gathered during the preparation of the formal CERCLA Inspection and previous IEPA activities involving this site. These activities included the reviewing of Illinois EPA records, preparation of the work plan and interviews with a

representative from the Celotex Corporation.

2.1 RECONNAISSANCE ACTIVITIES

In August 1996, Mr. Mark Wagner met with Mr. Lecil Colburn, Environmental Director for the Celotex Corporation, and conducted a pre-sampling reconnaissance inspection. This event was conducted to identify the sampling locations and familiarize the sampling team with the site. At this time several locations were found with exposed shingles and associated materials and it was also noticed that the perimeter fence was in poor condition and absent in numerous places. Current site conditions included heavy vegetation in non-disposal areas, and low water levels in the wetland areas and in the Kankakee River.

2.2 INTERVIEWS

As mentioned earlier Celotex's Environmental Director met with the author prior to the inspection. At this time CERCLA program objectives were discussed. Mr. Colburn was familiar with the CERCLA process and exercised Celotex's option to split samples with the IEPA.

2.3 SAMPLING ACTIVITIES

The CERCLA Site Team Evaluation Prioritization field sampling activities took place on August 21 and 22, 1997. One groundwater and seven soil samples were collected during this segment of the inspection. All sampling was performed in accordance with IEPA sampling methods and procedures. The soil samples were taken to determine if contaminants were present on-site.

Figure 3, identifies the sample locations from the August 1997, STEP, and sample descriptions are summarized in Table 1.

2.4 SAMPLING RESULTS

All samples were analyzed for Target Compound List (TCL) parameters. Several pesticides, PCBs, volatile organic compounds and inorganic substances were detected at numerous sample locations. One of these sample locations had Aroclor-1242, zinc, cyanide and copper levels three times the background concentrations. Key samples with levels and contaminants are presented in Table 2.

Any PCBs
A previous CERCLA investigation also found elevated copper levels at six sediment sample locations throughout the site, the wetland areas and in the Kankakee River. Five of these six sample locations exceeded the Lowest Effect Level established by the Ontario Standards for Copper. Three of the six sample locations also exceeded the Lowest Effect Level for Manganese.

The complete analytical data package for Celotex is located in Appendix E and contains a copy of the Target Compound List (TCL) and data qualifiers used by USEPA.

3 SITE SOURCES

CERCLA activities have identified two sources at Celotex. They are a landfill and surface impoundment. Due to the limited scope of these screening activities, the possibility exists that further investigation of the site could reveal additional information that would further characterize these sources, or lead to the identification of additional sources.

3.1 SOURCE DEFINITION

Celotex Landfill:

The landfill was identified in aerial photographs and in a 1989 Screening Site Inspection Report. This area is approximately 22 acres in size and was not an engineered disposal area. This area was utilized after a smaller landfill located to the south was filled to capacity. Runoff from this area collects in two wetlands that each empty into the Kankakee River. Inorganics, mainly copper have been detected along both of these surface water paths. In Figure 3 it is referred to as the recent landfill.

As mentioned earlier the smaller landfill was the original area used as a disposal area by Celotex. Leachate previously sampled from it did not reveal the elevated levels found in the larger landfill. This area is prone to flooding from the Forked Creek. Several feet of various materials now cover this smaller landfill.

Celotex Surface Impoundment:

The surface impoundment is also visible in the aerial photographs. It is approximately one acre in size and is located at the north western edge of the above mentioned 22 acre landfill.

According to previous CERCLA inspections this impoundment originated as a low-lying area and was used to dispose of asphalt and other unknown materials. Previous sampling of it detected octa-chlorinated dioxins and furans three times the background concentrations.

4 MIGRATION PATHWAYS

4.1 SURFACE WATER PATHWAY

The surface pathway starts where surface water run off from the site enters the first perennial water body. This location is referred to as the probable point of entry (PPE). Celotex has two probable points of entry due to the location of the on-site wetlands. The point where surface water runoff enters these wetlands are the probable points of entry for the site.

These wetlands are contiguous to the Kankakee River. The 15 mile Target Distance Limit for this water body is a 15 mile stretch that terminates downstream on the Illinois River near Goose Lake. As mentioned earlier several sediment samples for this pathway contains copper and manganese at levels significantly higher than the Ontario Sediment Guidelines for Lowest Effects.

The wetlands associated with the site are listed by the Illinois Department of Conservation and the United States Department of the Interior. They are classified as a palustrine, forested, broad-leaved deciduous, temporarily and seasonally flooded environments. (See Appendix B, Area Wetland Map.)

The Kankakee River is a fishery and is also a source of drinking water for the City of Wilmington. The surface water intakes are upstream of the PPE and do not appear to be affected by the site.

4.2 SOIL EXPOSURE PATHWAY

This pathway evaluates surficial contamination and the likelihood that people and sensitive environments will be exposed to them. The site is fenced along its west, south, and eastern sides leaving the north boundary open and accessible to the public. The eastern side of the fence is also breached at the end of Hayden Court. Throughout the site are walking or bicycling paths that are well defined indicating frequent use.

The surface of the site has: off-specification products, loose gravels and sands, silty-loams, clay and is sparsely vegetated in the landfill area. All of the landfilled areas appear to lack adequate cover material.

Findings from the 1989, Site Inspection revealed the presence of arsenic, barium, cadmium, chromium, lead, and zinc on the surface of the site. Octa-chlorinated dioxins and furans were also detected in the surface impoundment during the 1995, inspection. The results from these inspections can be found in Appendix D. Approximately 4500 people live within a one mile radius of the site and there are no schools or day care facilities within 200 feet of the site.

4.3 GROUNDWATER PATHWAY

The geology of the area consists of a shallow sand and gravel aquifer ranging from 70-135 feet in thickness underlain by Silurian Dolomite. Separating these two aquifers is a confining layer of blue shale and blue clay. The shallow sand and gravel aquifer is the aquifer of concern (AOC). Underlying the glacial-drift is the Ft. Atkinson Limestone and Scales Shales, and the Galena and Platteville Groups.

Residents using private wells are the primary users of groundwater in the Wilmington area. These wells range from approximately 15-80 feet in depth, (sand and gravel) and approximately 150-700 feet in depth (Silurian Dolomite). The closest known private well is located approximately 2000 feet southeast of the site on the opposite side of the Kankakee River. Due to the location of this well and other private wells in the area no drinking water samples were collected during this CERCLA STEP Inspection. One on-site monitoring well was sampled and revealed several inorganic analytes and one semivolatile compound.

4.4 AIR PATHWAY

Residential areas border the eastern side of the site. There is no air related complaints on file with the Illinois EPA, and the landfill operation would not generate significant air emissions. No formal air samples were collected but air monitoring was performed for screening purposes. Both the photo-ionization (PID) and flame-ionization (FID) methods were utilized, with the FID being more responsive to the conditions at the site.

Wind erosion of the surface soils is also minimal except during high winds due to the particle size and soil types of the contaminated soils.

5.0 ADDITIONAL RISK-BASED OBJECTIVES

This section discusses additional screening objectives used to evaluate the Celotex Corporation Dump site. These objectives have not been used to assess the site for Hazard Ranking System (HRS) purposes.

5.1 TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO)

The Illinois EPA's TACO guidance document (proposed rules under 35 IL Adm. Code Part 742), can be used to develop site specific remediation objectives for sites being addressed under the Illinois Site Remediation Program. This document discusses key elements required to develop risk-based remediation objectives, how background values may be used, and provides guidance through three tiers of the risk-based approach. The Illinois EPA uses this guidance, and the groundwater standards established in 36 IL Adm. Code 620, to determine soil and groundwater remediation objectives.

5.1.1 TACO Soil Objectives

The soil contaminants from the 1996 CERLCA investigation will be compared to the soil corrective action objectives established for residential properties, with the inhalation, ingestion, and migration to groundwater pathways each evaluated. Tier 1 consists of "look-up" tables, which considers limited site-specific information and are based on simple numeric

models.

Four on-site soil samples had PCB levels above the Tier 1 objective for a residential scenario. Arsenic was also reported above the clean objective at all six of the on-site sample locations.

5.1.2 TACO Groundwater Objectives

The author of this report has concluded that groundwater beneath the facility can be classified as Class II groundwater. The decision was based upon the fact that the site contained no potable water supply wells within the minimum setback zone and the drinking water from the area is supplied by the Kankakee River.

The groundwater sample detected levels of bis (2-ethylhexyl) phthalate, barium, copper, cyanide, and lead which exceeded Class II groundwater corrective action objectives.

5.2 ONTARIO AQUATIC SEDIMENT QUALITY GUIDELINES

The concentrations of contaminants found in the sediment samples previously collected from the on-site wetlands and the Kankakee River were compared to Ontario Aquatic Sediment Quality Guidelines. These sediment quality guidelines are non-regulatory ecological benchmark values that serve as indicators of potential aquatic impacts. The Lowest Effect Level (LEL) indicates sediment contamination that can be tolerated by the majority of the benthic organisms. The Severe Effect Level (SEL) represents heavily polluted conditions that are expected to be detrimental to the health of benthic organisms.

Copper levels exceeded the LEL in six of seven sediment samples collected in 1995. The remaining sample location reported manganese levels in excess of the SEL.

5.3 ECOTOX THRESHOLDS

USEPA Ecotox Thresholds are ecological benchmarks that are media-specific contaminant concentrations and are used as an indicator of possible adverse ecological effects that may warrant further site investigation. Ecotox Thresholds are to be used for screening purposes and are not regulatory criteria, site-specific cleanup standards or remediation goals.

The screening level for arsenic was exceeded in one sediment sample collected from an on-site wetland area.

TABLE 1

SAMPLE DESCRIPTIONS

CELOTEX CORPATE

DUMP SITE

ILD 981961634

SAMPLE	DEPTH	APPEARANCE	LOCATION
X101	0-4"	Sandy-loam	South Park Wilmington, Illinois
X102	NR	Dark loam-clay	West side of fill area
X104	12-18"	Gray clay with plastic material some shingles	North side of fill area, runoff leading to wetland area
X105	6-8"	Waste sample, felt paper mineral surface roll	North of main access road in fill area stressed vegetation
X106	6-12"	Gray clay shingles, felt paper	East side of fill area, runoff to swamp area and eastern depression
X107	8-18"	Light gray material mix of shingle granuals	South side of western depression
X108	18"	gray clay, with sand and shingle granuals	South side of eastern depression

SITE NAME

KEY SOIL SAMPLE SUMMARY

TABLE 2

Celotex Corp. Dump Site

ILD 981961634

SAMPLING POINT	X101	X102	X104	X105	X106	X107	X108
	ebwt6	ebht7	ebht3	ebht4	ebht5	ebhw5	ebhw6
PARAMETER							
PESTICIDES / PCB							
Dieldrin	--	NA	--	5.3	--	70	--
Endosulfan sulfate	--	NA	--	--	--	5.3P	--
4,4'-DDT	--	NA	--	--	--	8.8P	--
Endrin Ketone	--	NA	--	--	--	5.3P	--
alpha-Chlorodane	--	NA	--	--	--	30	--
Aroclor-1242	54	NA	72P	330P	27JP	3400PE	--
INORGANICS							
	X101	X102	X104	X105	X106	X107	X108
	meaqc9	ebht7	meaqd2	meaqd3	meaqd4	meaqd5	meaqd6
Aluminum	6040	NA	5320	5320	6130	6420	5570
Arsenic	5.6	NA	3.0	1.3B	2.4	1.8B	1.1B
Barium	64.0	NA	64.6	50.4	46.6	77.3	58.9
Calcium	15000	NA	44400	6940	3090	4930	4360
Chromium	11.0	NA	9.7	11.0	14.5	22.0	12.3
Copper	12.1	NA	11.9	15.1	16.4	93.9	9.3
Iron	14400	NA	14400	7980	10500	44400	6700
Lead	38.6	NA	6.3	10.7	10.2	79.2	6.4
Magnesium	7780	NA	10100	2430	2960	2060	3430
Manganese	682	NA	620	162	285	118	75.7
Mercury	0.06U	NA	0.10B	0.05U	0.06U	0.30	0.05U
Nickel	12.6	NA	10.7	8.1B	13.1	9.3B	8.1B
Selenium	1.0B	NA	0.62B	0.42U	0.58	0.55B	0.41U
Silver	1.0U	NA	3.0	1.5B	1.0U	1.2B	0.89U
Thallium	0.61U	NA	0.60U	0.55U	0.61U	0.69	0.54U
Vanadium	14.4	NA	13.2	11.7	16.9	12.4B	15.5
Zinc	82.0	NA	38.7	69.8	64.6	336	59.9
Cyanide	0.28B	NA	0.34B	0.20B	0.27B	17.9	0.03



SITE LOCATION MAP
CELOTEX CORP. DUMP
ILD 981961634

FIGURE 1.

